



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/680,502

10/07/2003

Fabiano Rimediotti

71161

5507

23872

7590

11/14/2006

MCGLEW & TUTTLE, PC

P.O. BOX 9227

SCARBOROUGH STATION

SCARBOROUGH, NY 10510-9227

EXAMINER

BUEKER, RICHARD R

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4

## Office Action Summary

Application No.

10/680,502

Applicant(s)

RIMEDIOTTI ET AL.

Examiner

Richard Bueker

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

Art Unit: 1763

Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1, lines 9-11, the phrase "a second surface molten metal pool forming means spaced apart from said first surface pool forming means but in close proximity to said first surface pool forming means for increasing the wettability of molten metal in a location adjacent to said first pool forming means and said second pool forming means" was not in the specification as originally filed, and is new matter. The specification as originally filed also failed to disclose an embodiment that included the above quoted limitation in combination with the further claim 1 limitation of "each pool being separate from the other pool by each said pool forming means thereof".

Claims 1-16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, the phrase "the web feeding direction" is vague and indefinite because it lacks proper antecedent basis and because the claim fails to define the recited "web". Also in claim 1, the intended meaning of the phrase "a second surface molten metal pool forming means spaced apart from said first surface pool forming means but in close proximity to said first surface pool forming means for increasing the wettability of molten metal in a location adjacent to said first

pool forming means and said second pool forming means" is unclear. In claim 18, the phrase "said pair of means" lacks proper antecedent basis.

The following typographical error should be corrected: in claim 19, line 8, a semicolon should be provided after "means".

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schonherr (5,321,792) taken in view of Achtner (5,788,769), Kleyer I (5,179,622) and Portner (DE-970246) and taken in further view of Alexander (2,962,538). Schonherr discloses a vacuum evaporation apparatus for metallizing a strip substrate. It is noted that the Schonherr patent (see col. 1, lines 63-65) incorporates by reference the disclosure of U.S. patent 5,242,500 to Elvers, and therefore the entire disclosure of Elvers is included in the disclosure of Schonherr and is also relied on in this rejection. Elvers is the U.S. equivalent of DE-A-4027034 discussed on pages 2 and 3 of applicants' specification. Schonherr (Fig. 4) discloses the use of a plurality of resistively heated vaporization sources that are heated and fed with a metal wire, which is liquefied and vaporized, each source having a body extending in a main longitudinal direction. A strip substrate is fed over the sources in a feed direction. Schonherr does not discuss the use of sources that have plural pools of molten metal on the surface of each source. Each of the secondary references, however, teach that a resistively heated elongated

Art Unit: 1763

source having plural pools of molten metal on the surface of the source will provide improved performance in comparison to a resistively heated source having one elongated pool. It would have been obvious to one skilled in the art to substitute a plural pool source of the type taught by the secondary references for each of the single pool sources used in the apparatus of Schonherr, because the secondary references teach that such a substitution would have provided improved vaporizer performance. Regarding claims 8-13, which are product-by-process claims, see MPEP 2113. The sources described in claims 8-13 appear to be identical with or only slightly different from that disclosed by Achtner, Kleyer I and DE-970246. It is noted that the "plurality of superficial incision lines" (claim 8, for example) reads on a conventional machining step to shape a ceramic or metal body, either prior to or after firing the body to sinter it. A "plurality of superficial incision lines" can be combined together to form a single large cavity.

Regarding the claim 1 limitation of "each of said surface means provided for increasing the wettability of molten metal in a location", Alexander (5,321,792) has been added to this rejection. It would have been obvious to one skilled in the art to provide superficially processed lines in the pool cavities of Achtner, DE-970246 or Kleyer I, because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity. The superficial incision lines recited in claim 27 represent a product-by-process limitation and they appear to be identical with or only slightly different from that disclosed by Alexander. It is noted that

Art Unit: 1763

the "plurality of superficial incision lines" (claim 8, for example) reads on Alexander's disclosed step (col. 4, lines 10-12) of cutting grooves in a pre-sintered body of ceramic.

Regarding the newly added claim 1 limitation of "and another of said two pools is fed by another corresponding metal wire", it is noted that Achtner (see abstract and col. 3, lines 30-37) teaches the step of feeding plural molten pools by using plural wires. In view of this teaching of Achtner, it would have been obvious to use plural wires to feed plural molten pools in the apparatus of Schonherr.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schonherr (5,321,792) taken in view of Achtner (5,788,769), Kleyer I (5,179,622), Portner (DE-970246) and Alexander (2,962,538) for the reasons stated in the preceding paragraph, and taken in further view of Anderson (3,770,529) (Fig. 2 and col. 3, line 61 to col. 4, line 10), Copley (4,914,270) (col. 1, lines 10-28), Fukushima (6,765,174) (Fig. 1, abstract and col. 9, lines 11-31) or applicants' description of the prior art (page 8, line 32 to page 9, line 10 of applicants' specification). It would have been prima facie obvious to form the cavities in the boats of Achtner, Portner or Kleyer I using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Also, it would have been prima facie obvious to form the superficial incision lines of Alexander using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Regarding applicants' description of the prior art, they state on page 9: "This type of incision machining is known per se to persons skilled

in the art, but has not been used for the production of this type of sources (sic). The incision lines are typically formed by means of laser machining.” It appears that applicants may be intending to say that laser machining was known in the prior art for forming an evaporation source, but has not been used to form “sources” (plural) as disclosed in their specification. Applicants should provide an unambiguous clarification of the meaning of this quoted statement.

Claims 17-20 and 24-27 are rejected under 35 U.S.C. 103(a) as obvious over Ahtner (5,788,769) (Fig. 3) taken in view of Alexander (2,962,538). Regarding claims 23-27, which are product-by-process claims, see MPEP 2113. The boat described in claims 24-27 appears to be identical with or only slightly different from that disclosed by Ahtner. Regarding the newly added claim 27 limitation of “each of said surface means provided for increasing the wettability of molten metal in a location”, Alexander (5,321,792) has been added to this rejection. It would have been obvious to one skilled in the art to provide superficially processed lines in the pool cavities of Ahtner because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity. Ahtner (see abstract and col. 3, lines 30-37) also teaches the step of feeding plural molten pools by using plural wires as now recited in claim 19.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahtner (5,788,769) taken in view of Alexander (2,962,538) for the reasons stated in the rejection of claim 17 above, and taken in further view of Portner (DE-970246) and/or Kleyer I (5,179,622). It would have been obvious to provide the pools of Ahtner

Art Unit: 1763

with a rectangular shape or flat bottom because Portner and/or Kleyer I teach that evaporation processes can be successfully performed using resistively heated evaporation boats having pool cavities of the claimed shapes.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Achtner (5,788,769) in view of Alexander (2,962,538), and taken in further view of Anderson (3,770,529) (Fig. 2 and col. 3, line 61 to col. 4, line 10), Copley (4,914,270) (col. 1, lines 10-28), Fukushima (6,765,174) (Fig. 1, abstract and col. 9, lines 11-31), or applicants' description of the prior art (page 8, line 32 to page 9, line 10). It would have been prima facie obvious to form the cavities in the boats of Achtner using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Also, it would have been prima facie obvious to form the superficial incision lines of Alexander using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Regarding applicants' description of the prior art, they state on page 9: "This type of incision machining is known per se to persons skilled in the art, but has not been used for the production of this type of sources (sic). The incision lines are typically formed by means of laser machining." It appears that applicants may be intending to say that laser machining was known in the prior art for forming an evaporation source, but has not been used to form "sources" (plural) as disclosed in their specification. Applicants should provide an unambiguous clarification of the meaning of this quoted statement.



Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as obvious over Portner (DE-970246) (see figs. 1-7) or Kleyer I (5,179,622) (see Figs. 1 and 2) taken in view of Alexander (2,962,538). It would have been obvious to one skilled in the art to provide superficially processed lines in the pool cavities of Portner or Kleyer I because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity.

Claims 19-22 and 24-27 are rejected under 35 U.S.C. 103(a) as obvious over Portner (DE-970246) (see Figs. 1-7) or Kleyer I (5,179,622) (see Figs. 1 and 2) taken in view of Alexander (2,962,538) for the reasons stated in the rejection of claims 17 and 18 above, and taken in further view of Achtner (5,788,769). Achtner (see abstract and col. 3, lines 30-37) teaches the step of feeding plural molten pools by using plural wires. In view of this teaching of Achtner, it would have been obvious to use plural wires to feed plural molten pools in the apparatus of Portner or Kleyer I.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over (5,788,769), Portner (DE-970246) or Kleyer I (5,179,622), each one taken in view of Alexander (2,962,538) and Achtner (5,788,769) for the reasons stated in the rejection of claims 19-22 and 24-27 above, and taken in further view of Anderson (3,770,529) (Fig. 2 and col. 3, line 61 to col. 4, line 10), Copley (4,914,270) (col. 1, lines 10-28), Fukushima (6,765,174) (Fig. 1, abstract and col. 9, lines 11-31), or applicants' description of the prior art (page 8, line 32 to page 9, line 10). It would have been prima facie obvious to form the cavities in the boats of Portner or Kleyer I using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each

Art Unit: 1763

teaches that a laser can be used for laser machining a ceramic body into a desired shape. Also, it would have been prima facie obvious to form the superficial incision lines of Alexander using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Regarding applicants' description of the prior art, they state on page 9: "This type of incision machining is known per se to persons skilled in the art, but has not been used for the production of this type of sources (sic). The incision lines are typically formed by means of laser machining." It appears that applicants may be intending to say that laser machining was known in the prior art for forming an evaporation source, but has not been used to form "sources" (plural) as disclosed in their specification. Applicants should provide an unambiguous clarification of the meaning of this quoted statement:

Claims 28-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleyer II (5,198,032) in view of Yamaji (JP 1-219157) or Schonherr (5,321,792) and in further view of Aichtner (5,788,769), Kleyer I (5,179,622) and Portner (DE-970246) and taken in further view of Alexander (2,962,538). Kleyer II (Fig. 1) discloses a vacuum vaporization plant in which a web-like substrate is passed over at least one crucible, said crucible having a main longitudinal direction. The "feeding direction" of the web-like substrate is along the surface of rotating coating roller 18. It can be seen from Fig. 1 of Kleyer II that this feeding direction includes a direction of feeding that is inclined with respect to the main longitudinal direction of the crucible. Yamaji (Fig. 1) and Schonherr are cited to show that it was known in the art to provide plural aligned

Art Unit: 1763

crucibles to coat a moving web substrate. It would have been obvious to one skilled in the art to use plural crucibles in the apparatus of Kleyer II because Yamaji and Schonherr teach that a moving web can be coated desirably more uniformly using plural crucibles.

Kleyer II does not discuss the use of sources that have plural pools of molten metal on the surface of each source. Each of Achtner, Kleyer I and Portner, however, teach that a resistively heated elongated source having plural pools of molten metal on the surface of the source will provide improved performance in comparison to a resistively heated source having one elongated pool. It would have been obvious to one skilled in the art to substitute a plural pool source of the type taught by the secondary references for each of the single pool sources used in the apparatus of Kleyer II, Yamaji or Schonherr, because Achtner, Kleyer I and Portner teach that such a substitution would have provided improved vaporizer performance. Regarding claims 32-35, which are product-by-process claims, see MPEP 2113. The sources described in claims 8-13 appear to be identical with or only slightly different from that disclosed by Achtner, Kleyer I and Portner. It is noted that the "plurality of superficial incision lines" (claim 8, for example) reads on a conventional machining step to shape a ceramic or metal body, either prior to or after firing the body to sinter it. A "plurality of superficial incision lines" can be combined together to form a single large cavity.

Regarding the claim 28 limitation of "each of said surface means provided for increasing the wettability of molten metal in a location", Alexander (5,321,792) has been added to this rejection. It would have been obvious to one skilled in the art to

Art Unit: 1763

provide superficially processed lines in the pool cavities of Achtner, DE-970246 or Kleyer I, because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity.

Regarding the newly added claim 28 limitation of “means for supplying a metal wire to said first surface pool forming means and for supplying another metal wire to said second surface pool forming means”, it is noted that Achtner (see abstract and col. 3, lines 30-37) teaches the step of feeding plural molten pools by using plural wires. In view of this teaching of Achtner, it would have been obvious to use plural wires to feed plural molten pools in any apparatus having a vaporization source that includes plural molten pools.

Applicants have described the rejection of claim 1 as being “over US ‘792 in view of either US ‘769 or US ‘622 or DE ‘246 and in further view of US ‘538”. This is incorrect. The rejection of claim 1 is “over Schonherr (5,321,792) taken in view of Achtner (5,788,769), Kleyer I (5,179,622) **and** Portner (DE-970246) and taken in further view of Alexander (2,962,538)” (emphasis added). Achtner, Kleyer I and Portner are cited together as a group to show what was previously known in the art regarding vapor sources that include plural pools of molten metal.

Applicants have argued that Kleyer I (5,179,622) does not disclose individual sources, each provided with plural pools of molten metal, but instead teaches two separate sources that are longitudinally aligned. It is noted, however, that Kleyer I teaches the step of clamping two individual evaporator boats together to form a single rigid unitary evaporator having two cavities for forming two molten pools. The two

Art Unit: 1763

individual evaporator boats of Kleyer I are not merely "aligned", but are rigidly clamped together to form a unitary evaporator having plural pools.

In their arguments with respect to Kleyer I (5,179,622), applicants have characterized the col. 1 summary of the invention of Kleyer I as follows:

"the object underlying the present invention is to provide a series of evaporator[s] where a plurality of individual evaporators is **clamped in pairs between the electrical supply lines**".

It is noted, however, that the specific language of Kleyer's summary of the invention (see col. 1, lines 28-31 of Kleyer I) is:

"the object underlying the present invention is to provide **a series evaporator** where a plurality of individual evaporators is clamped in pairs between the electrical supply lines" (emphasis added).

From this, it can be seen that Kleyer I considers his inventive evaporator to be a single evaporator that is constructed by rigidly clamping together two individual evaporators to form one unitary series evaporator.

Applicants have also argued that Kleyer I is silent as to the purpose of providing a vaporization source having plural pools. It is noted, however, that Achtner (see col. 2, lines 48-65 and col. 3, lines 30-36) explains that the purpose of providing a long boat

Art Unit: 1763

vaporization source is to increase the evaporating capacity of the source. One skilled in the art would easily understand this purpose, and would also understand that the same purpose applies to the vaporization source of Kleyer I.

Regarding the meaning of the term "series evaporator" used by Kleyer I, it is noted that at col. 1, lines 20-25, Kleyer I describes U.S. Pat No. 3,387,116 as disclosing a series evaporator. Therefore, Dupuis (3,387,116) is cited of interest to illustrate an evaporator of the type that Kleyer I describes as a series evaporator. See Figs. 1 and 2 of Dupuis, for example.

Also, the dictionary definition of "monolithic" is cited of interest. The series evaporator of Kleyer I can properly be described as monolithic because it constitutes a single unit when it is clamped together. It is noted also that the plural pool evaporation sources of Achtner and Portner can also properly be described as monolithic.

Regarding Achtner (5,788,769), applicants have argued that Achtner's plural evaporation zones are very small. It is noted, however, that the present claims do not define any size of the recited molten metal pool means.

Applicants have argued that Achtner's vaporization source has a very small vaporization area, while the pools of applicants' vaporization source increases vaporization area. It is noted, however, that Achtner (see col. 2, lines 48-65) teaches that the purpose of his plural molten metal pools is to increase the size of his vaporization area. Therefore, Achtner's purpose is the same as that of applicants.

Applicants have argued that the claims require maintaining a continuous conductive cross section, and applicants have further argued that is not the case in

Art Unit: 1763

Achtner's vaporization source. It is noted, however, that Achtner's Fig. 3 source clearly has a continuous conductive cross section, both transverse to the longitudinal axis and in parallel to the longitudinal axis. Furthermore, the Fig. 3 source of Achtner can be seen to have a continuous conductive cross section parallel to the longitudinal axis that passes between holes 12 and also "including continuous regions of said first pool forming means [11] and said second pool forming means [11'] allowing electrical current to pass therethrough" as recited in claim 17, for example.

Further regarding the "continuous conductive cross section" of Achtner, it is noted that Achtner teaches at col. 3, lines 42-44, that the hole 12 illustrated in Fig. 3 can also be positioned horizontal and parallel to the plane of the trough. Such a hole arrangement would also provide a continuous conductive cross section parallel to the longitudinal axis that passes between holes 12 and also "including continuous regions of said first pool forming means [11] and said second pool forming means [11'] allowing electrical current to pass therethrough" as recited in claim 17.

Regarding Portner (DE 970246), applicants have argued that Portner teaches transversely arranged evaporation sources. It is noted, however, that Schonherr (5,321,792), which is the primary reference in the rejection of claim 1, and which incorporates by reference the teachings of Elvers (5,242,500), teaches that it is desirable to align a plurality of elongated evaporation sources with respect to the substrate feeding direction in the alignment disclosed by applicants. For that reason it would have been obvious to one skilled in the art to align the elongated vapor source of Portner in the same alignment.

Applicants have also argued that Portner's vaporization source does not include a continuous conductive cross section. It is noted, however, that Portner's Fig. 1 source clearly has a continuous conductive cross section, both transverse to the longitudinal axis and in parallel to the longitudinal axis. Portner's Fig. 1 arrangement provides a continuous conductive cross section parallel to the longitudinal axis that passes between notches "c", and also "including continuous regions of said first pool forming means [b] and said second pool forming means [b] allowing electrical current to pass therethrough" as recited in claim 17.

Regarding Alexander (2,962,538), applicants have argued that Alexander teaches machining the bottom of one single pool. It is noted, however, that Portner, Kleyer I and Aichtner all teach that it is desirable to provide an elongated vaporization source with plural pool forming means, such as plural shallow depressions in the surface of a monolithic body. Since each separate pool of such a plural pool vaporization source has its own need to be wetted by molten metal, it would have been obvious to one skilled in the art to apply the teachings of Alexander to each of the pool forming means. Therefore, it would have been obvious to provide grooves to increase wettability as taught by Alexander for each of the plural pools of Portner, Kleyer I and Aichtner.

Applicants have described the rejection of claim 28 as being "over US '032 in view of JP '157 (or US '792) and in further view of US '769 or US '622 or DE '246". This is incorrect. The rejection of claim 28 is over "Kleyer II (5,198,032) in view of Yamaji (JP 1-219157) or Schonherr (5,321,792) and in further view of Aichtner (5,788,769),



Kleyer I (5,179,622) and Portner (DE-970246) and taken in further view of Alexander (2,962,538)" (emphasis added). Achtner, Kleyer I and Portner are cited together as a group to show what was previously known in the art regarding vapor sources that include plural pools of molten metal.

Applicants' arguments with respect to the rejection of claim 28 are not persuasive for the same reasons given above in response to applicants' arguments with respect to claims 1 and 17.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

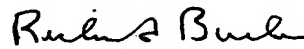
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parvis Hassanzadeh can be reached on (571) 272-1435. The fax phone

Art Unit: 1763

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Richard Bueker  
Primary Examiner  
Art Unit 1763